MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2022/2023

DPD5211 – PROGRAM DESIGN

(For DIT students only)

7 JULY 2023
9.00 A.M – 11.00 A.M
(2 Hours)

INSTRUCTIONS TO STUDENT

1. This examination paper consists of 7 pages.
2. **SECTION A:** There are **2** structured questions.
3. **SECTION B:** There is **1** structured question.

SECTION A: Structured Questions (Total: 20 Marks)

Instruction: Please write all your answers in the Answer Booklet provided.

QUESTION 1 (10 marks)

I. Draw a flowchart that determines the user if the integer number that the user entered is even or odd. The system will stop looping if the user enters the number 0. Use a *while loop* control structure to determine the looping condition.

[5m]

Sample output:

```
Type a number (0 to exit): 9
Number is odd.
Type a number (0 to exit): 6
Number is even.
Type a number (0 to exit): 0
Thank you.
```

II. Given an incomplete code below.

```
int main()
 {
    int age;
    float spay, neuter;
    char msg[50];
    printf("Enter the dog age (months):");
    scanf("%d", &age);

   ----a-------

   printf("\nStatus: %s", msg);
   printf("\nNeuter Price:RM %.2f", neuter);
   printf("\nSpay Price:RM %.2f", spay);
   return 0;
 }
```

Write an ***if else statement*** to determine the price based on Table 1 [5m]

Age	Animal Clinic Service		
	Spay	**Neuter**	**Status**
6 – 9 months	Price = 350.00	Price = 480.00	Eligible
> 9 months	Price = 540.00	Price = 750.00	Eligible
<6 months	Price = 0	Price = 0	Not Eligible

Table 1

Continued...

QUESTION 2 (10 Marks)

I. Write the output display from the following code. [1m]

```
int w, g, k;
char msg[] = {"Transforming society"};
w = 2;
g = 3;

while ( g > w )
{ g = 2 * w++;
     w = g * ++w;
}
  k = w-8;
  printf ("\nThe character is: %c",msg[k]);
```

II. Declare an object name ***Rose*** with size 10 of struct *Flower*. [2m]

III. Given a full program with the error below.

`#include<stdio.h>`	//Line 1
`integer x;`	//Line 2
`void fun1(int *x)`	//Line 3
`{ *x == *x+37; }`	//Line 4
`int fun2()`	//Line 5
`{int x=3;`	//Line 6
`x= fun3()/x;`	//Line 7
`return(x);`	//Line 8
`}`	//Line 9
`int fun3()`	//Line 10
`{x=x+13;`	//Line 11
`Return;`	//Line 12
`}`	//Line 13
	//Line 14
`void main()`	//Line 15
`{ x=10;`	//Line 16
`printf("%d",x);`	//Line 17
`funny1(&x);`	//Line 18
`printf("\nx=%d",x);`	//Line 19
`printf("\nx=%.2f",fun2());`	//Line 20
`printf("\nx=%d",fun3());`	//Line 21
`}`	//Line 22

a. Determine **FIVE** errors in the above code. Write the line and the correct syntax. [5m]

b. If the errors are fixed, write out the output display. [2m]

Continued...

SECTION B (Total: 20 Marks)

Instruction: Please write all your answers in the Answer Booklet provided.

MMU will be organizing a 5-day book fair at MMU Cyberjaya Campus. Write a full program, to store the vendor particulars, package information, and the total payment based on the following instructions.

A. Declare a structure of Booth details record called ***Booth*** that has:
- Booth Number: BNo (Char 5).
- Booth Category : category(Char 200).
- Booth Type: Btype (Char).
- Booth Description: Descption (Char 200).
- Company Name: CompName (Char 50).
- Company Contact Person: ContName (Char 50).
- Company Contact Handphone Number: CHphone (Char 15).
- Booth Price: price (float).
- Total Payment: TotalPayment (float).
- Global declaration of structure as ***BDetails***.

B. Declare a structure of Package type details record called ***Package*** that have:
- Package type: Ptype (Char)
- Package Description: PDescpt (Char 50)
- Package price: Pprice (float)

C. In ***main( )*** function:
- Display "********WELCOME TO MMU BOOK FAIR******** ".
- Called function ***Get_Location().***

D. ***Get_Location()*** function:
- Declare variable:
  - Booth Location: location (integer).

- Display the package location as displayed in Table 2.
  **refer to the sample output*

Booth Location	Description Details
1	1 - Outdoor: 3 Chairs and 2 tables
2	2 - Indoor: 2 Chairs, 1 table and 2 shelve
Others	You Enter the wrong choice. Program Terminate

Table 2

- Get the booth location from the user.
- Using a ***switch case*** statement:
  - If the user enters location 1 or 2,

Continued...

- Determine the location and copy the description to the structure ***BDetails category***.
- Call the function ***Menu***(…) and pass the booth location.

- If the user enters other numbers,
  - Display "You Enter the wrong choice. Program Terminate".
  - Terminate the program using *exit(0)*;

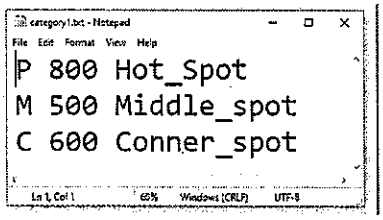
E. ***Menu(…)*** function:

- Receive the booth location.
- Declare:
  - structure ***Package*** with the object name ***P*** size of 3.
  - Booth Type: type (char)
  - File name : fname (char 50)

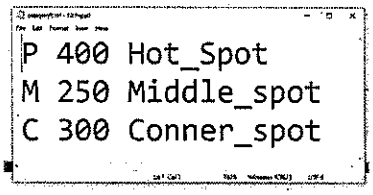
- Use an ***if-else*** statement :
  - To determine which file name to open and display the content. Refer to the given table 3. Saved the correct file name to ***fname***.
  - The files have the following data which is the booth type, price, and description.

Booth Location	File Name
1	category1.txt
2	category2.txt

Table 3



category1.txt content



category2.txt content

- Use an ***if-else*** statement:
  - If the file doesn't exist, display the statement "File doesn't exist" and terminate the program using *exit(0)*.
  - If the file exists:
    - Display
      "*******TYPE OF BOOTH*******"
    - Use a ***while loop*** statement, till the end of the file,
      - ❖ To retrieve the content of the selected file and save it to object **P**, members ***Ptype***, ***Pprice*** and ***PDescpt***.
      - ❖ Display all the information from the object **P**, members ***Ptype***, ***Pprice*** and ***PDescpt***.

Continued…

- Get the user to enter the Booth type.
- In a ***for loop***:
  - Use an ***if-else*** *statement* to search the booth type from the object ***P Ptype***. If the type is found, copy object **P** type, price, and description details to object ***BDetails***. Refer to Table 4.
  - Call the function **BoothBooking()**.

Object **BDetails**	Object **P**
Btype	Ptype
Price	Pprice
Descption	PDescpt

Table 4

F. ***BoothBooking()*** function:
- Request the user to enter the booth number, contact name, company name, and handphone number.
- Calculate the total payment.

  Total payment = Booth price * 5 days.
- Saved all user input and the total payment to the ***BDetails*** members.
- Call function ***DisplaySummary()***.

G. ***DisplaySummary()*** function:
- Display all information from the structure Booth details record.

Continued...

Output sample

Sample 1

```
********WELCOME TO MMU BOOK FAIR********

 1 - Outdoor: 3 Chairs and  2 tables
 2 - Indoor: 2 Chairs ,  1 table and 2 shelve
Booth Location:1

**********TYPE OF BOOTH**********
Type:P
Price 800.00
Description  Hot_Spot

Type:M
Price 500.00
Description  Middle_spot

Type:C
Price 600.00
Description  Conner_spot
****************************************
Enter Booth Type:P


Enter Booth No:P102
Enter Contact Name: Mr. Raju
Enter Company Name: Crescent News
Enter Handphone: 017-5689425


=========BOOKING SUMMARY=========
Company Name : Crescent News
Company Person : Mr. Raju
Company Handphone Number : 017-5689425
Package category : Location 1 - Outdoor: 3 Chairs ,  2 tables
Package Type :P
Location :  Hot_Spot

Price per Day: RM 800.00 x 5days
Booth No :P102
Total Payment : RM4000.00
=========+++++++++=========
```

Get Location()

Menu(...)

BoothBooking()

DisplaySummary()

Continued...

Sample 2

```
********WELCOME TO MMU BOOK FAIR********
 1 - Outdoor: 3 Chairs and  2 tables
 2 - Indoor: 2 Chairs ,  1 table and 2 shelve
Booth Location:2

**********TYPE OF BOOTH**********
Type:P
Price 400.00
Description  Hot_Spot

Type:M
Price 250.00
Description  Middle_spot

Type:C
Price 300.00
Description  Conner_spot
****************************************
Enter Booth Type:C

Enter Booth No:C008
Enter Contact Name: Ms. Nur Aina Samad
Enter Company Name: Manggis Kids
Enter Handphone: 014-9874521

=========BOOKING SUMMARY=========
Company Name : Manggis Kids
Company Person : Ms. Nur Aina Samad
Company Handphone Number : 014-9874521
Package category : Location 2 - Indoor: 2 Chairs ,  1 table and 1 shelve
Package Type :C
Location :  Conner_spot
Price per Day: RM 300.00 x 5days
Booth No :C008
Total Payment : RM1500.00
=========+++++++++=========
```

Get Location()

Menu(...)

BoothBooking()

DisplaySummary()

End of Page.